

CITATION				Filing Date		January 22, 2004	
PTO-1449				First Named Inventor		Carlos Dangelo	
				Art Unit		2811	
				Examiner Name		Parekh, Nitin	
Sheet	1	of	3	Attorney Docket Number		062273-5001-US	

U.S. PATENT DOCUMENTS								
Examiner Initials	Cite No.	Document Number Number - Kind Code <sup>1</sup>	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Class	Subclass	Filing Date if Appropriate	
[Signature]		6,231,744 B1	05-15-2001	Ying et al.				
		6,359,288 B1	03-19-2002	Ying et al.				
		6,432,740 B1	08-13-2002	Chen				
		2003/011333A1	06-03-2003	Montgomery, et al.				
		2003/0231471A1	12-18-2003	De Lorenzo et al.				
		2004/0013598A1	01-22-2004	McElrath et al.				
		6,856,016 B2	02-15-2005	Searls et al.				
FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document Country Code <sup>2</sup> - Number <sup>3</sup> - Kind Code <sup>4</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Class	Subclass	Translation	
[Signature]		WO 03/054958A1	07-03-2003	Intel Corporation			Yes	No
		EP 1329953A1	08-03-2003	Intel Corporation				
		WO 03/072679A1	09-04-2003	Carbon Nanotechnologies, Inc.				
		WO 03/107419A1	12-24-2003	Intel Corporation				
OTHER NON PATENT LITERATURE DOCUMENTS								
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published						
[Signature]		Banerjee, Kaustav, et al., "3-D Heterogeneous ICs: A Technology for the Next Decade and Beyond", 5th IEEE Workshop on Signal Propagation on Interconnects, Venice, Italy, May 13-16, 2001.						
		Cassell, Alan, "Directed Growth of Free-Standing Single-Walled Carbon Nanotubes", <i>J Am. Chemical Society</i> , 1999, 121, pgs. 7975-7976.						
		Chiang, Ting-Yen, "A New Analytical Thermal Model for Multilevel ULSI Interconnects Incorporating Via Effect", Center for Integrated Systems, Stanford University (no date given).						
		Chiang, Ting-Yen, et al., "Effect of Via Separation and Low-k Dielectric Materials on the Thermal Characteristics of Cu Interconnects", <i>IEDM 2000</i> (no date).						
		Cui, Yi, et al., "Doping and Electrical Transport in Silicon Nanowires", <i>Journal of Physical Chemistry</i> . Vol. 104, No. 22, June 8, 2000, pgs. 5213-5216.						

Examiner Signature	1-PA/3544211.1 [Signature]	Date Considered	08/26/05
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<input checked="" type="checkbox"/>		de Pablo, P.J., "A simple, reliable technique for making electrical contact to multiwalled carbon nanotubes", <i>Applied Physics Letters</i> , Vol. 74, No. 2, January 11, 1999, pgs. 323-325.
<input type="checkbox"/>		Delzeit, Lance, et al., "Growth of carbon nanotubes by thermal and plasma chemical vapour deposition processes and applications in microscopy", <i>Nanotechnology</i> , Vol. 13, May 23, 2002, pgs. 280-284.
<input type="checkbox"/>		Delzeit, Lance, et al., "Growth of multiwall carbon nanotubes in an inductively coupled plasma reactor", <i>Journal of Applied Physics</i> , Vol. 91, No. 9, May 1, 2002, pgs. 6027-6033.
<input type="checkbox"/>		Goodson, K.E., et al., "Improved Heat Sinking for Laser-Diode Arrays Using Microchannels in CVD Diamond", <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology</i> , Part B, Advanced Packaging, Vol. 20, Issue 1, February 1997, pgs. 104-109.
<input type="checkbox"/>		Hone, J., et al., "Thermoelectric Power of Single-Walled Carbon Nanotubes", <i>Physical Review Letters</i> , Vol. 80, No. 5, February 2, 1998, pgs. 1042-1045.
<input type="checkbox"/>		Huang, Z.P., et al. "Growth of highly oriented carbon nanotubes by plasma-enhanced hot filament chemical vapor deposition", <i>Applied Physics Letters</i> , Vol. 73, No. 26, December 28, 1998, pgs. 3845-3847.
<input type="checkbox"/>		<i>International Semiconductor Road Map (ITRS-2001)</i> , Section on Interconnect, <a href="http://public/itrs.net/files/2001ITRS/interconnect.pdf">http://public/itrs.net/files/2001ITRS/interconnect.pdf</a> .
<input type="checkbox"/>		Kong, Jing, et al., "Synthesis of individual single-walled carbon nanotubes on patterned silicon wafers", <i>Nature</i> , Vol. 395, Oct. 29, 1998, pgs. 878-881.
<input type="checkbox"/>		Kurabayashi, K, et al., "Precision Measurement and Mapping of Die-Attach Thermal Resistance", <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology</i> , Part A: Advanced Packaging, Vol. 21, Issue 3, September 1998, pgs. 506-514
<input type="checkbox"/>		Li, Jun, et al., "Electronic properties of multiwalled carbon nanotubes in an embedded vertical array", <i>Applied Physics Letters</i> , Vol. 81, No. 5, July 29, 2002, pgs. 910-912.
<input type="checkbox"/>		Liu, Jie, et al., "Controlled deposition of individual single-walled carbon nanotubes on chemically functionalized templates", <i>Chemical Physics Letters</i> , 303, April 2, 1999, pgs. 125-129.
<input type="checkbox"/>		McEuen, Paul L., et al., "Single-Walled Carbon Nanotube Electronics", <i>IEEE Transactions on Nanotechnology</i> , Vol. 1, No. 1, March 2002, pgs. 78-85.
<input type="checkbox"/>		Ren, Z.F., et al., "Synthesis of Large Arrays of Well-Aligned Carbon Nanotubes on Glass", <i>Science</i> , Vol. 282, November 6, 1998, pgs. 1105-1107.
<input type="checkbox"/>		Shi, Li., "A Microdevice for Measuring Thermophysical Properties of Nanowires and Nanotubes", <i>2001 ASME International Mechanical Engineering Congress and Exposition</i> , November 11-16, 2001, pgs. 359-362.
<input type="checkbox"/>		Shi, Li., "Scanning thermal microscopy of carbon nanotubes using batch-fabricated probes", <i>Applied Physics Letters</i> Vol. 77, No. 26, December 25, 2000, pgs. 4295-4297.
<input checked="" type="checkbox"/>		Stevens, R., "Improved fabrication approach for carbon nanotube probe devices", <i>Applied Physics Letters</i> , Vol. 77, No. 21, November 20, 2000, pgs. 3453-3455.
Examiner Signature	I-PA/3544211.1 <i>Nitin Parekh</i>	Date Considered 08/26/05

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<input checked="" type="checkbox"/>		Sun, X, et al., "Theoretical modeling of thermoelectricity in Bi nanowires", <i>Applied Physics Letters</i> , Vol. 74, No. 26, June 28, 1999, pgs. 4005-4007.
<input type="checkbox"/>		Yakobson, Boris I., et al., "Fullerene Nanotubes: C <sub>1,000,000</sub> and Beyond", <i>American Scientist online</i> , <a href="http://www.americanscientist.org/template/AssetDetail/assetid/2870?fulltext=true&amp;print=yes">http://www.americanscientist.org/template/AssetDetail/assetid/2870?fulltext=true&amp;print=yes</a> .
<input type="checkbox"/>		Zhang, Yuegang, et al., "Electric-field-directed growth of aligned single-walled carbon nanotubes", <i>Applied Physics Letters</i> . Vol. 79, No. 19, November 5, 2001, pgs. 3155-3157.
<input type="checkbox"/>		Zhang, Wei De, et al., "Synthesis of vertically aligned carbon nanotubes films on silicon wafers by pyrolysis of ethylenediamine", <i>Elsevier, Thin Solid Films</i> , 422, 2002, pgs. 120-125.
<input checked="" type="checkbox"/>		Zhou, P., et al., "Thermomechanical Diagnostics of FLIP-CHIP/BGA Structures Using Phase-Shifting Electronic Speckle Pattern Interferometry", <i>EEP, Advances in Electronic Packaging</i> , Vol. 26-2, ASME, 1999, pgs. 1875-1880.
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